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Success Story

Surgical Management of Umbilical Hernia in Calves

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Hernia is defined as the protrusion of the contents of a body cavity through a normal or abnormal opening in the wall of that cavity either to lie beneath the intact skin or to occupy another adjacent body cavity (Alkhilani, 2019). Hernias may be either congenital or acquired Radostits *et al.*, 2006). The hernia consists of a hernial ring which is composed of abdominal muscles through which the contents of abdomen and peritoneum is passed. Hernia sac is other part composed of outside skin and inside of peritoneum. The contents of hernia are usually fat, omentum, however in larger hernia, parts of small intestines, parts of liver and sometimes uterus and bladder also present. The umbilicus in new born consists of tube like structure which connects foetal bladder to the placental sac known as urachus and remnants of umbilical vessels that transport blood from fetus to its mother. An umbilical hernia occurred when the opening in the ventral abdomen through which the umbilicus protrudes fails to close properly after birth (Tyagi and Singh, 2010; Sutradhar *et al.*, 2009; Al-Sobayil and Ahmed, 2007).

The occurrence of umbilical hernia in the male calves ranges from 1-21% and is consistent with the hypothesis that the enhancer is the carrier of major dominant or co-dominant gene with partial re-entrance for umbilical hernias (Ron *et al.*, 2004). Milk production and growth rate are some of the genetic side effects which predispose to form umbilical hernias (Tangudarai and Vijaykumar, 2003). Acquired umbilical hernia are observed within few weeks of birth. Many factors predispose for acquired umbilical hernias, like improper manual cutting of cord, breaking the cord too close to the body wall, mal handling of foetus during parturition. Calves can live with

umbilical hernias without any problems, sometime loop of intestine can slip though the opening and become twisted. This is referred to as a strangulated hernia and it is a surgical emergency.

The recommended surgical management is herniorapphy. If hernial ring is large requires prosthetic mesh to oppose the abdominal wall defect. Although very few hernias require abdominal mesh. The mesh is not recommended in hernias with umbilical infection. The present study describes the surgical management of umbilical hernia in six calves.

Six clinical cases of umbilical hernia reported to Surgery Department, Bihar Veterinary College, Patna with history swelling in umbilical region. History revealed animals have swelling in abdominal region from one week to two months with progressive increase in size. Careful clinical examination was revealed ring on palpation of the swelling in all cases. Physical parameters like temperature, respiration and heart rate were under the normal physiologic range. On the basis of clinical and ultrasonographic examination, clinical cases were diagnosed as umbilical hernia and decided surgical management. Pre-operatively, the animals were kept off feed and off water for 24 hours and 12 hours respectively. The animals were administered electrolyte solutions and adequate fluid therapy to correct any dehydration and acid base imbalances. Surgery performed under spinal anaesthesia and local infiltration at site of incision. The animals were restrained in dorsal recumbency and surgical site was prepared aseptically for surgery.

Surgical area was separated with rest part of body with help of drapes and elliptical incision was made through the skin on each side of the swelling. These incisions were connected anteriorly and posteriorly. The hernial sac was grasped with allis tissue forceps and the inner hernial sac was separated from the outer hernial sac using blunt dissection. The skin between the two elliptical incisions was dissected. The skin lateral to the incision was then undermined to expose the hernial ring. The contents along with the intact peritoneum were inverted inside the abdominal cavity. In one case hernia contents was not returned into the abdominal cavity due to large voluminous hernial contents and small hernial ring then the ring was enlarged before the contents are reduced into the abdominal cavity. Circular hernial ring is converted into an oval shape for smooth closure by incising the ring caudally and cranially with' V' shaped incisions. The ring was the closed by placing a series of overlapping mattress sutures through its edges using Nylon No.2 suture material.

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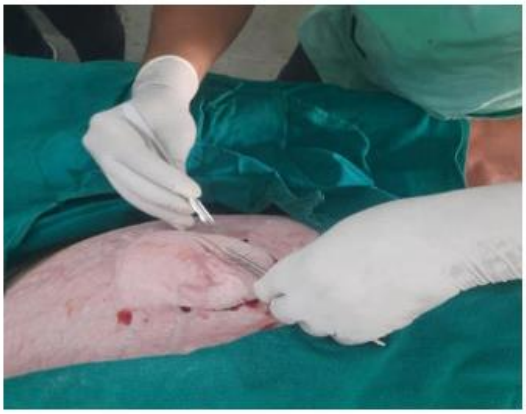
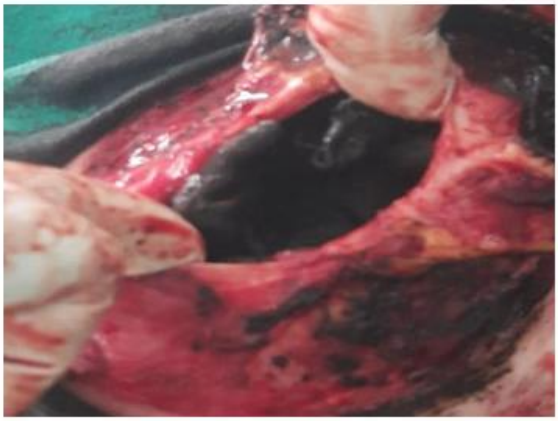
Clinical case of Umbilical hernia

Aseptic preparation of surgical site



Skin incision

Resecting the hernia sac



Farcing the hernia ring

Suturing the hernia ring

Suturing the subcutaneous tissue

Suturing the skin

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Muscle and skin sutured as per the standard technique. Animals were post operatively prescribed with broad spectrum antibiotic amoxicillin sodium and Sulbactum sodium at the dose rate of 10 mg/ kg body weight intramuscularly for 7 days. Analgesic agent Inj. Fuxin Meglumine was given at the dose rate of 2 mg/ kg body weight I/M for three days. Animal was also treated with fluid therapy, neuro-vitamine 10 ml I/M and pre and probiotic agent as per required. Animal was start feeding from next day. All animals were fully recovered after 15 days without any severe complication.

Surgical management was found effective in the management of umbilical hernia in calves. Under field condition umbilical hernia in calves can be managed successfully under spinal anaesthesia along with local infiltration of surgical site. Proper diagnosis, timely operation and proper post-operative care help in successful outcomes.

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